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INJURIES AND LOSS OF LIFE AND PROPERTY ALLEGED
TO HAVE BEEN CAUSED BY THE USE OF KERO-
SENE, IN MICHIGAN, DURING THE YEAR
ENDING DECEMBER 31, 1890.

[Reprinted from the Annual Report of the Michigan State Board of Health for the year 1891.]

[REPRINT No. 385.]

Continuing a practice pursued in previous years, the office of the Secretary of the State Board of Health, has, during the year 1890, sought to obtain information relative to each casualty, alleged to have been caused by the use of kerosene, which came to the notice of said office.

The principal sources from which this office obtains facts in regard to such casualties as above mentioned, are four, viz.: from reports by the Fire Marshal of Detroit, State Inspectors of Illuminating Oils, Local Health Officers, and from newspaper reports. The data collected from these sources, show that during the year 1890, information was received at this office, of the occurrence of 55 casualties consequent on the use of kerosene in Michigan. These casualties were reported to have occurred in 13 localities, causing loss of two lives, injury (non-fatal), to 3 persons, and damage to property to the amount of \$18,282.00.

This reported damage, does not include all the actual pecuniary loss occasioned by the above mentioned casualties, because in very many instances where houses, barns, and other property were destroyed, the loss was not reported.

The following tables and extracts from correspondence, show the localities in which the alleged casualties occurred, the nature of each casualty, the damage caused thereby, and whatever other details in regard to them this office has been able to collect.

Throughout the year 1890, the legal test for illuminating oil in Michigan was a "flash" test at one hundred and twenty degrees Fah. in a closed tester, approved by the State Board of Health.

TABLE 1.—*Casualties in Michigan during the year 1890, believed to have been consequent on the use of Kerosene, information of which was received at the Office of the Secretary of the State Board of Health. In this year the legal test was a Flash Test at 120 degrees Fah., in a closed tester.*

	Number of Casualties.	Number of Localities.	Pecuniary losses. Dollars.	Lives lost.	Persons injured (not fatally).
In Detroit.....	43	1	\$18,282	0	0
In State (outside Detroit).....	12	12	Not reported.	2	3
Totals.....	55	13	\$18,282	2	3

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List of Casualties Consequent on the use of Kerosene, in Detroit, Calendar Year, 1890.
(Supplied by William H. Baxter, Fire Marshal in Detroit.)

Date.	Street and Number.	Nature of Casualty.	Amount of Damage.
Jan. 2	76 Macomb	Overflowing lamp	
Jan. 5	155 Napoleon	Lamp explosion	\$48.00
Jan. 6	14 Locust	Lamp explosion	
Jan. 21	81-83 Croghan	Overheated stove	265.00
Feb. 28	252 First	Lamp explosion	839.00
Mar. 8	69 Monroe	Stove explosion	15.00
Mar. 23	198 Seventeenth	Lamp explosion	150.00
Apr. 10	181 River	Stove explosion	90.00
Apr. 14	202 Cass	Lamp explosion	50.00
Apr. 18	1429 Michigan	Falling of lamp	
Apr. 18	117 St. Joseph	Falling of lamp	500.00
May 5	86½ Park	Stove explosion	50.00
May 18	88 Myrtle	Stove explosion	400.00
May 25	10 Thirty-second	Lamp explosion	745.00
June 3	68 Baltimore E.	Lamp explosion	
June 9	33-35 Galbert	Lamp explosion	686.00
June 19	358 Riopelle	Stove explosion	
June 24	282 Orleans	Lamp explosion	900.00
July 19	230 Humboldt	Leaking stove	
July 20	260 Bagg	Lamp explosion	280.00
July 21	373 Townsend	Lamp explosion	1,496.00
July 28	687 Clinton	Overflowing stove	634.00
Aug. 10	531 Sixth	Lamp explosion	
Aug. 23	35 Monroe	Falling of lamp	
Aug. 28	193 Waterloo	Careless use of lamp	
Sept. 2	41 Beech	Overflowing stove	
Sept. 20	280 Williams	Careless use of lamp	
Sept. 24	45 Adams E.	Lamp held too close to clothing	1,049.00
Sept. 25	287 Clinton	Stove explosion	365.00
Sept. 30	35 Center	Lighting fire with oil	
Oct. 6	Steam barge in river	Lamp explosion	6,113.00
Oct. 11	115 Twelfth	Careless use of lamp	10.00
Oct. 15	154 Maple	Overflowing stove	15.00
Nov. 3	57 Wilcox	Stove upset	38.00
Nov. 5	321 Montcalm E.	Lamp held too close to clothing	25.00
Nov. 11	252 Croghan	Lamp too close to ceiling	33.00
Nov. 15	Mt. Elliott	Lamp too close to clothing	
Dec. 8	178 High E.	Stove upset	200.00

List of Casualties Consequent on the Use of Kerosene in Detroit.—CONTINUED.

Date.	Street and Number.	Nature of Casualty.	Amount of Damage.
Dec. 22.....	59 Jos. Campan.....	Lamp set fire to clothing.....	200.00
Dec. 24.....	441 Hastings.....	Lamp explosion.....	400.00
Dec. 24.....	368 Seventh.....	Lamp tipped over.....	
Dec. 25.....	277 Michigan.....	Lamp explosion.....	381.00
Dec. 29.....	56 Montcalm W.....	Lamp tipped over.....	5.00

*List of Casualties consequent on the use of Kerosene in Michigan (outside the city of Detroit), calendar year 1890.**

Date.	Locality.	Nature of casualty and resultant damage.
Jan. 7.	Manistee city.....	Lamp explosion which caused destruction of a furniture factory, and death of one man, fatally burned.
Mar. 3.	Bay City.....	Fire caused by lamp explosion. Small house burned.
May 18.	Flint city.....	Lamp explosion causing a paper mill to be burned.
Aug. 3.	Eagle township.....	Lamp explosion causing a house to be burned.
Nov. 21.	Sturgis village.....	Fire caused by a woman attempting to build a fire in stove with kerosene. One child fatally, and one man and one woman seriously, burned.
No dates given.	Ossineke township.....	Fire caused by lamp being upset and broken, on a haymow.
	Franklin township.....	Fire cause by overturned lamp.
	Grand Ledge village.....	Fire caused by the explosion of kerosene lamp.
	Grand Haven township..	Fire caused by lamp explosion.
	Novi township.....	Fire caused by tipping over a lantern.
	Vassar village.....	Fire caused by overturning of lamp by a cat.
	Crosswell village.....	Fire caused by explosion of a lamp.

* The data on which this list is based were obtained from reports of local health officers, deputy oil inspectors, and newspapers.

The foregoing lists show that of the 55 casualties therein mentioned, 22 were reported to have been caused by lamp explosions, 18 by careless handling of lamps, 6 by stove explosions, 7 by careless use of kerosene in stoves, and 2 by attempts to light fires with kerosene.

A Man Fatally Burned at Manistee City.

The "State Republican" of Jan. 7, 1890, contained the following paragraph:

"Manistee, Mich., Jan. 7.—The Filer town manufacturing company's furniture works here were completely destroyed by fire yesterday, and one man burned to death.

"The fire was caused by the explosion of a kerosene lamp used by William Chambers, who worked in the finishing department. He was anxious to begin work before daylight and had brought the lamp to the works, where, on attempting to light it, an explosion occurred, and almost instantly the varnish, the man's clothing and the factory were on fire. The unfortunate man was burned to death on the spot, and the other workmen barely escaped with their lives. The building was entirely destroyed, but was well insured."

Fire at Bay City Caused by a Lamp Explosion.

In regard to this casualty, Richard Ferris, Deputy Oil Inspector, wrote March 15, 1890, to Hon. H. D. Platt, State Oil Inspector, as follows:

"Enclosed find statement made by Lawrence Cramer in regard to his house burning. He says: His child was sick, and got up about 4:30 A. M., and was in an adjoining room; smelt smoke or something to that effect, and when he went to the kitchen found it in flames. Does not know how the fire originated but thought it must have been caused by lamp in some way. Does not think it was on account of the oil. Says he has used same kind for some time prior to fire and is still using it."

The following, relative to this casualty, is from the "Detroit Journal" of March 11, 1890:

"A lamp exploded in Lawrence Cramer's house, Bay City, yesterday, and the building burned. The loss was small, but it falls heavily upon a poor man."

Lamp Explosion at Flint Alleged Cause of Fire in Paper Mill.

Geo. H. Turner, Deputy Oil Inspector, wrote to Hon. H. D. Platt, May 19, 1890, relative to this casualty, as follows:

"Yesterday morning, 2 A. M., Hon. F. R. Lewis had the misfortune to have his paper mill burned, or partially so. It was caused by an explosion of a lamp or torch. The night watchman, it seems, after having made his rounds, came in the building quite cold, placed his torch on the wall (brick) burning, and he thought he would warm himself, and in doing so his lamp exploded, and before he could communicate the alarm to the water works, in order to have them sound the fire alarm, the building burned, or nearly so. I made an examination or (test). I found the oil stood 125 degrees.

"It is conjectured that the wick in the lamp was burned down so low it caused gas to accumulate in the lamp which created the explosion."

Fire in Eagle Township Caused by Lamp Explosion.

The "Detroit Evening News" of Aug. 5, 1890, contained the following:

"Robert Patrick's house, near Portland, was burned to the ground by the explosion of a lamp, and the family barely escaped with their lives. Nothing was saved and considerable cash was lost."

August 12, 1890, E. T. Yeomans, Deputy Oil Inspector, reporting to Hon. H. D. Platt relative to this casualty, wrote:

"In obedience to your instructions, received Aug. 11, I have today been to the locality of the Patrick fire. The farm is six miles east of Portland, in the township of Eagle, Clinton county.

"Mr. Robert Patrick is the only witness of the origin of the fire. Sunday morning about one o'clock, Aug. 3, Mr. Patrick, feeling unwell arose to take some medicine. The lamp which he lighted had a large glass font, holding about three pints, and was not much if any more than half full of oil. It had not been refilled during the summer.

"After lighting the lamp, Mr. Patrick left or placed it on a shelf close to a partly open window.

"He then went to a table on the opposite side of the room to prepare and take some medicine.

"The room becoming suddenly dark, he thought the wind had blown out the lamp. He started to get a match from the next room, but had only reached the door when the explosion occurred, throwing fire all over the room behind him.

"Closing the door to the burning room he aroused his family but had scarcely time to get them out before the entire building was in flames. Mr. Patrick thinks that the wind blew the blaze down into the oil chamber. He says no lamp had been used in the house during the summer, only mornings he had used kerosene to light the kitchen fire.

"Mr. P. thinks about five minutes intervened between the lighting of the lamp and the explosion. So long a time had elapsed since the lamp was last filled that no one could tell where the oil was purchased, whether at Eagle (a small station on the D. L. & N. R. R.) or at Portland. It is to be noted that the

lamp was left where it was pretty sure to be at least blown out, instead of on the table where it would seem to have been indispensable for the purpose for which it was lighted.

"The house did not belong to Mr. Patrick; an insurance of \$500 on the contents in favor of Mrs. P. is believed to fully cover her interest."

A Child Fatally, and a Man and a Woman Seriously Burned at Sturgis.

The following paragraph appeared in the "Detroit Evening News" of Nov. 21, 1890:

"Sturgis, Mich., Nov. 21.—Mrs. Charles Maak attempted to build a fire with kerosene last evening. She did not know live coals were in the stove and a blaze was started in the oil in the can. It exploded and she and a 3-year old daughter were fearfully burned. Mr. Maak's body was burned in trying to put out the fire. The child may die from inhaling the flames."

Samuel B. Follett, M. D., health officer of the village of Sturgis, having been written to from this office for information concerning this casualty, wrote Nov. 24, 1890, on this subject, as follows:

"In regard to the inquiry herewith enclosed, I can say that Mrs. Maak on the evening of Nov. 20, in attempting to start a fire in her cook stove (wood) used kerosene oil. There had been a fire in the stove the fore part of the day and had gone out. She placed kindling in the stove and then in attempting to pour kerosene from the can on the kindling a blaze and explosion followed almost instantaneously. There was but very little kerosene in the can, probably full of gas, at the time of the explosion. The can was torn to pieces from the explosion and the contents thrown upon the hands and arms of Mrs. Maak and upon the head and shoulders of the 3-year old child near Mrs. M. at the time. The child was fatally burned about the head and died on the morning of Nov. 22, about 40 hours after the accident. Mrs. M., seriously burned on the hands, arms and body will probably recover. In attempting the rescue of wife and child, Mr. M. was also seriously burned on the hands and arms."

INJURIES AND LOSS OF LIFE AND PROPERTY ALLEGED TO HAVE BEEN CAUSED FROM THE USE OF GASOLINE IN MICHIGAN IN 1890.

In 1890, as in former years, an effort was made, at the office of the Secretary of the State Board of Health, to collect facts respecting every casualty attributed to the use of gasoline, in Michigan, which came to notice. During the year there were received at the office of the Secretary of the Board reports of 23 casualties in different parts of the State, alleged to have been caused by gasoline, with attendant losses of life and property and personal injury, as follows: Persons fatally burned, 3; persons badly, but *not fatally*, burned, 2; damage to property, \$8,395.00.

Of these 23 casualties reported, there occurred in the city of Detroit 20 casualties with loss of property amounting to \$3,395.00; in the city of Kalamazoo, 1 casualty with one woman fatally, and another woman seriously burned; in the city of Owosso, 1 casualty, with one man fatally burned, and an estimated damage to property of \$5,000.00; at Weston, Lenawee county, one woman fatally, and one man badly burned.

The following list of casualties in Detroit, and extracts from communications received from correspondents, together with clippings from newspapers, give what details we have in regard to the above-mentioned casualties:

*List of Casualties Consequent on the Use of Gasoline in Detroit. Calendar year, 1890.
(Supplied by William H. Barter, Fire Marshal in Detroit.)*

Date.	Street and No.	Nature of casualty.	Amount of damage.
January 12.....	312 Twelfth.....	Leaking stove.....	
January 29.....	1110 Vinewood.....	Man carried a pail of gasoline near a light.....	\$150.00
January 30.....	58 Cadillac Square.....	Overflowing stove.....	137.00
March 27.....	240-242 Gratiot.....	Torch explosion.....	1,300 00
April 26.....	426 Congress.....	Careless handling of vessel containing gaso- line.....	
May 29.....	315½ Michigan.....	Stove overflowed.....	
June 14.....	152 Theodore.....	Stove explosion.....	1,000.00
June 27.....	233 Second.....	Overflowing stove.....	378.00
June 27.....	75 Joy.....	Overflowing stove.....	
June 30.....	197 Porter.....	Overflowing stove.....	
July 1.....	39 Milwaukee E.....	Overflowing stove.....	
July 2.....	315 Michigan.....	Overflowing stove.....	
July 7.....	50 Perry.....	Overflowing stove.....	80.00
July 13.....	161 St. Antoine.....	Overflowing stove.....	
July 13.....	83 Columbia W.....	Overflowing stove.....	
September 12.....	318 Congress E.....	Overflowing stove.....	
September 17.....	67 Foundry.....	Overflowing stove.....	
September 19.....	771 Woodward.....	Stove explosion.....	
November 12.....	1005 Vinewood.....	Overflowing stove.....	350.00
November 13.....	60 Spruce.....	Overflowing stove.....	

Fatal Burning in Kalamazoo.

The Detroit Tribune of Nov. 18, 1890, contained the following paragraph:

"Kalamazoo, Nov. 17.—Two weeks ago Mrs. Briggs and Miss Nettie Wildsmith were burned by an explosion of gasoline. The former recovered, but the latter suffered excruciatingly and this morning died. She was 20 years old."

A letter was sent from this office to Dr. A. B. Cornell, health officer of the city of Kalamazoo, asking details in regard to this casualty. His reply was as follows:

"Your favor in regard to death of Miss Wildsmith is at hand. I have made a thorough examination of the case and find as follows: Mrs. Briggs purchased of the hardware firm of C. H. Dickinson a quantity of stove blacking, composed of *resin, plumbago, black varnish, and gasoline*. I am told that the firm use this to black their stoves. They prepare it themselves. The way the accident occurred was this. Miss Wildsmith was preparing the blacking in a jar on the hearth of the stove, in which there was a fire, and was stirring the gasoline into the mixture with a poker when the gasoline exploded, burning her to death. It was like all similar cases a piece of carelessness, though I think the sale of such stuff should be prevented by law. Though there might not have been any harm done in careful hands, or in the hands of the dealer. There is also another kind sold by all dealers that has turpentine and oil in it, * * * which I am of opinion is dangerous to public health, through just such carelessness as the above."

A Man Fatally Burned at Owosso.

The Detroit Evening News, of Nov. 29, 1890, contained the following:

"Owosso, Mich., Nov. 29.—John A. Chapman was boiled to a jelly in a gasoline tank at the gas works last night. He was a new man, and went near the vat with a lighted lantern. A terrific explosion followed, and the unfortunate Chapman fell into the burning, boiling oil and remained there until this morning.

"The explosion happened about 6 o'clock and shook the whole city. A flame shot 100 feet into the air. Soon a second report was heard and fire burst from an adjacent tank. The two blazed furiously, brilliantly lighting the town and country round about. * * *

"The loss to the company will be about \$5,000, and Owosso will be in total darkness until the plant is repaired, as the electric light works will not commence running until next week."

In response to a letter of inquiry in regard to this casualty, sent from this office, to Dr. S. S. C. Phippen, health officer of Owosso, the following letter, dated Dec. 7, 1890, was received:

"Your letter received and in answer I would say that I have enclosed a clipping from the 'Shiawassee American,' printed here, and which gives a very good description of the explosion. It is a better one than I could get up myself, although I hardly think the theory advanced as to the cause of it is correct, still it may be. The cause of it is not known and never can be found out."

Extracts from the clipping from the "Shiawassee American," referred to by Dr. Phippen, are as follows:

"Last Friday evening, about 6:30, the entire city was startled by a terrific explosion in the direction of the gas works, just south of the D. & M. depot, and instantly a flame shot up heavenward to a height of nearly seventy-five feet, indicating that the explosion was at the gas works. The effect of the explosion was felt throughout the city and for a long distance outside.

"The fire department responded with great promptness, and arriving at the scene found that the two large tanks west of the works were in flames, and at once commenced operations to save the building and works from destruction. Two streams were sufficient for the purpose, which were kept up until the oil had burned out, and the works were saved with but little damage to the building, and no stop in the supply of gas. Mr. O. F. Webster, superintendent of the works, says the department deserves much credit for thus saving the company's property.

"It was the storage tanks for naphtha that exploded. These tanks were about forty feet west of the gas works, lying parallel extending east and west, and were in a hole dug in the ground for the purpose, the one on the north side projecting about two feet above the ground and the other but a few inches. The tanks were of 3-16th shell with half inch heads, made by Reeves & Co., of Toledo, Ohio. They were 30 feet long and eight feet in diameter, and held over 11,000 gallons each. The tank on the south side contained at the time between 2,000 and 3,000 gallons of 63 naphtha, and the other had at the time about 6,000 gallons. The latter was a new tank and was filled that day for the first time. There was no cover over the tanks at the time. Mr. Webster says the new tank was absolutely air tight, as before it was filled it would float on the water that was in the hole. The new tank, containing the largest amount of naphtha, was exploded first. The manhole to this tank was in the center of the tank, and a few inches west of it was a hole just large enough to admit a two-inch pipe to connect with the transportation tank on the car standing on the south side of the tanks.

"Jonas A. Chapman, the engineer, and Charles Sprout were in charge of the works at the time. * * *

"The men commenced emptying the car into the tank about 3 o'clock in the afternoon of that day, and about two hours time was required for the naphtha to run through into the tank, and, darkness coming on, Chapman and Sprout decided to leave it until morning before uncoupling the hose connecting the car and tank, to avoid going near it with a light.

"Chapman's house is a few rods directly west of the tanks and a beaten path ran along the north side of and close to the tanks from the house to the works, and Chapman's son, aged about 18 years, went to call his father to supper, carrying a lantern, and in passing the tanks found a board sticking out of the hole somewhat obstructing the path, and he stopped and pushed it down into the hole beside the tank, so his father would not run against it. He says he was there at least two minutes with his lantern, and after calling his father passed back to the house. His father told him he would go to the house in a few minutes to get his supper and get ready to go to Corunna to attend lodge. The boy had been in the house but

a few minutes when the explosion occurred. Mr. Nichols, living near, says Chapman came out of the works with a lantern in his left hand, and locked the door, and he called to him to go with him to the Odd Fellows' lodge that evening and walked over to near Chapman, but the latter said he was going to Con-
nna and asked Nichols to go with him, but N. said he could not go. Chapman was then near the corner of the building, and said he must hurry to get ready to go, and Nichols started for his home and had gone only about ten rods when the explosion occurred.

"Chapman's lantern was found, considerably bruised and the globe and bail broken out, about 25 feet southwest of the tanks and his cap lying between the lantern and tanks. After the oil had burned out his body was found about 11 p. m. in the pit on the north side of the tank within about two feet of the west end, his head toward the west. Mr. Sprout found the body, and assisted by the firemen, took it out, and Coroner Baldwin held an inquest. The left side of his face was burned and the hair slightly burned from the left side of his head, and his mustache was all burned off except a little on the right side. Otherwise the body was not burned or boiled, as erroneously stated in dispatches sent out, the water in the pit and which ran in from the streams thrown by the fire department preventing the body from being entirely burned up. * * *

"Mr. Webster's theory of the accident is that Chapman, who had complained during the day of a severe headache, on going to his house accidentally stepped or slipped into the hole beside the tank, and in falling naturally threw up his hands, and having the lantern in his left hand it struck the tank very hard, breaking the globe, and the light coming in contact with some naphtha that may have been on the tank, slopped over from filling, ignited it, and instantly penetrated the tank. The tank on the south side exploded soon after. The concussion of course killed Chapman instantly.

A Woman Fatally Burned at Weston.

The following paragraph appeared in the Detroit "Evening Journal" of Nov. 26, 1890:

"Weston, Mich., Nov. 26.—Maria Mead, a widow living over H. P. Tolford's store, set her clothing on fire last evening, while lighting a gasoline stove, and died a few hours after. She leaves two young sons. Mr. Tolford was badly burned in his efforts to rescue Mrs. Mead."

Dr. F. W. Essig, health officer of Fairfield township, Lenawee county, where Weston is situated, was written to from this office for further particulars relative to this casualty. His reply, dated Dec. 10, 1890, was as follows:

"I will state that I was called in great haste on the eve of Nov. 26 (I think) about 6 o'clock, to attend Mrs. Mead. I learned the following: It seems she filled the cup of the generator to her gasoline stove to overflowing. She then lit it and took a cloth to wipe up what had run over. The fire dropping on the cloth set it afire. She then tried to put it out with her apron, which in turn caught fire. She then became frightened and ran down stairs, and seeing the door to Mr. H. B. Tolford's store open started to go in, but was stopped. Mr. Stolford then ran up stairs and got a blanket and wrapped her in it. Before he got down, however, some one had torn her clothes partly off. It was at this time that I was called. I ordered her taken to her brother's, one Judson Schomp, where she died four hours later. About two-thirds of the entire surface of her body was burned, the worse being her hands, abdomen, inner surface of her thighs, hypochondriac and epigastric regions."

Fatal Burning of a Woman in Bruce Township. Not Caused by Gasoline.

The Detroit Tribune of April 22, 1890, had the following paragraph:

"Romeo, April 21. Twenty-year old Mrs. Schontz tried to light a fire by using gasoline this morning and will die probably as a result. There was an immediate explosion and the flames set fire to Mrs. Schontz's clothing. She screamed for help, but was horribly burned before the fire was put out by friends, who rushed to her rescue."

It appears from the following letter from Dr. John B. Fares, health officer of the village of Romeo, Macomb county, who was written to for

particulars relative to this casualty, that it was not attributable to the use of gasoline. Dr. Fares wrote to this office April 23, 1890, as follows:

"The particulars in regard to the accidental burning of Mrs. Etta May Sharfe, a lady 21 years of age, are as follows: She was serving as a domestic in the family of Orlando N. Devereaux, who lives in the township of Bruce, just outside the village limits. She had nearly completed the washing and was drawing water from the washing machine and emptying it with a pail. The stove had a low hearth, and it is supposed the skirt of her dress caught fire by actual contact with the wood fire which had been lighted in the early morning, but with ordinary wood kindling, no gasoline ever having been used in the house. She ran some fifty or sixty rods, seeming bewildered; in short, her clothing all burned from her body, and she died in twelve hours. Dr. Greenshields was called to the case.

"This occurred on Monday, the 21st inst."

CASUALTIES CONSEQUENT ON THE USE OF NAPHTHA IN MICHIGAN, CALENDAR YEAR 1890.

During the year 1890, there were reported to the office of the Secretary of the State Board of Health four casualties in the State, caused by the use of naphtha, with consequent damage to property amounting to \$50.00.

Three of the above-mentioned casualties occurred in the city of Detroit, as shown in the following list, and one in the city of Owosso. Of this latter casualty we have no detail other than the fact that a fire was caused by an explosion of naphtha.

*List of Casualties Consequent on the use of Naphtha, in Detroit, Calendar year 1890.
(Supplied by William H. Baxter, Fire Marshal in Detroit.)*

Date.	Street and No.	Nature of casualty.	Amount of damage.
Feb. 21	215 Gratiot.....	Using stove blacking while fire was burning....
May 20	160 Fourth.....	Vapor ignited.....
June 16	Wight	Gas at varnish works took fire.....	\$50 00



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